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10/550,199

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EXAMINER

THAI, LUAN C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-----------------------------------------|--|
| Office Action Summary | Application No. 10/550,199 | Applicant(s) KALVESTEN ET AL. | |
| | Examiner Luan C. Thai | Art Unit 2891 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election *without traverse* of Group II, claims 17-25, filed 10/31/08, is acknowledged. Claims 1-16 are canceled.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to because they contain hand drawn figures and label numbers. Corrected drawing sheets in compliance with 37 CFR 1. 121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1. 121(d). If the changes are not accepted by the examiner, the applicant will be noticed and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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4. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 22 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim **22**, the recitation “*the electrical connections*” has no antecedent basis.

In claim **24**, the recitation “*the insulated electrical connections*” has no antecedent basis.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 17-21 and 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Vieux-Rochaz et al. (6,815,827) and Honda (6,353,262 of record), separately.

Regarding claims 17-21 and 23-24, Vieux-Rochaz et al (See figures 2-12, specifically Fig. 11) disclose a product usable as a starting substrate for the manufacture of micro-electronic devices, comprising: an essentially flat silicon wafer (20) of semiconductor material having a first surface (21) and a second surface (22), at least one electrically conducting member extending through the silicon wafer, characterized in that the electrically conducting member (46) is insulated from surrounding material of the silicon wafer by a finite layer of an insulating material (48/50), and in that it (e.g., the element 46) comprises the same material as the silicon wafer, solder bump (42) is placed on the back or second surface of the silicon wafer, wherein the silicon wafer has a thickness of 500 μm (Col. 4, lines 7+) and the thickness of the finite layer of the insulating material is 6 μm (Col. 4, lines 15+).

Honda (Figs. 5-8, 21-25, and 31-41) also teaches a structure identical to Vieux-Rochaz's structure device; therefore, the claim's structure in claims 17-21 and 23-24 are also rejected under 35 U.S.C. 102(b) as being anticipated by Honda for the similar reasons detailed above.

9. Claims 17-20 and 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Robert (6,756,304 of record).

Regarding claims 17-20 and 23-24, Robert (See figures 1-14) disclose a product usable as a starting substrate for the manufacture of micro-electronic devices, comprising: an essentially flat silicon wafer (1) of semiconductor material having a first surface (3) and a second surface (2), at least one electrically conducting member extending through the silicon wafer, characterized in that the electrically conducting member (4) is insulated from surrounding material of the silicon wafer (1) by a finite layer of an insulating material (7), and in that it (e.g.,

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the element 4) comprises the same material as the silicon wafer (1), wherein the silicon wafer has a thickness of 525 μm (Col. 3, lines 60+) and the thickness of the finite layer of the insulating material is 50 μm (Col. 3, lines 66+).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vieux-Rochaz et al. (6,815,827).

Regarding claim 22, Vieux-Rochaz et al. discloses the claimed invention as detailed above except for specifying the range of the pitch/center-to-center distance (e.g., larger than 10 μm , typically 50-100 μm) between the electrical connections.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the electrical connections with the claimed pitch because the distance between two electrical connections is an art recognized variable of importance which is subject to routine experimentation and optimization, and it would have been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or workable ranges involves only in routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 25, although Vieux-Rochaz et al. lack an inclusion of applying the silicon wafer through electrical connections in a micro-electrical mechanical system device as claimed, it would have been obvious to an artisan of ordinary skill in the art at the time the

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invention was made to incorporate such electrical connection structure of Vieux-Rochaz et al. into a micro-electrical mechanical system device in order to simplify the process of making the connection.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 8:00 AM - 4:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue A. Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Luan C. Thai/

Primary Examiner, Art Unit 2891

Luan Thai

Primary Examiner

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November 20, 2008